

1/14/93

MEMORANDUM

SUBJECT: Additional Soil Investigation Required at the
Monsanto - J.F. Queeny Plant, St. Louis, Missouri

TO: File

FROM: Pat Nichols *P. Nichols*
EPA Project Manager

INTRODUCTION

Upon completion of the first phase of the RCRA Facility Investigation (RFI), the EPA has determined that the rate and extent of contamination at the facility have not been defined. Therefore, the EPA is requiring additional investigation to complete the RFI. In order to define the rate and extent of soil contamination at the facility, the following undertakings should be required.

VICTOR STREET TERMINAL AREA

There is documented contamination within the boundaries of the former earthen berm. The boring locations are spread out within the area of the former berm which provides for a good representation of contaminants in this area. Soil samples beyond the boundary of the former berm are recommended to delineate the extent of the contamination. Contaminants of concern include Volatile Organic Compounds (VOCs), particularly chlorobenzene, Acid and Base/Neutral Organic Compounds (BNAs), Metals, and Sulfide. Contaminants not detected in this area include Pesticides, Herbicides, PCB's, Dioxins, and Furans. Continuous sampling at 2 ft. intervals is recommended until groundwater is reached. Collection and analyses of a minimum of **12 boring locations** is recommended **outside of the berm** and a minimum of **2 boring locations** is recommended **in the center of the berm** (where samples have apparently not been collected). These samples should be analyzed for **total VOCs, BNAs, metals, and sulfate**.

COAL STORAGE YARD

The only known use for this area is to stockpile coal. This use alone would provide for a strong contribution to any semi-volatile contamination to the groundwater. Since there is no documentation of any soil analytical data having been gathered at this area, it is recommended to fully assess this area for semi-volatiles, with some selected samples analyzed for Appendix IX constituents, including dioxins and alachlor. Collection and



R00107865
RCRA RECORDS CENTER
Arch

analyses of a minimum of 6 boring locations is recommended within the boundaries of this area. **Three of which should be analyzed for the full scan of Appendix IX constituents and the remaining 3 for semi-volatiles only.** Continuous sampling is recommended at 2 ft. intervals until the groundwater is reached.

QUARRY AREA

Historically, the Quarry has been a disposal area for construction waste, and possibly other miscellaneous waste. The analytical soil data indicates a wide variety of contamination, but particularly of BNAs and Metals. There were two VOC's detected, but no Pesticides, Herbicides, PCBs, Dioxins, or Furans. Historical aerial photographs indicate that the Quarry actually extended further north than what was investigated during the RFI. Therefore, soil sampling is recommended in the area north of the previously investigated Quarry area. A minimum of 4 soil borings is recommended with continuous sampling at 2 ft. intervals until the groundwater is reached. The samples should be analyzed for the full scan of **Appendix IX constituents, dioxins, and alachlor.**

LASSO AREA

Enough soils samples have been collected in this area to verify that there is a release and in some areas the soil is saturated with a purple-colored waste. Some of this purple waste is in the groundwater and all of it will eventually enter into the groundwater unless it is contained or remediated. The nature and extent of this release needs to be fully delineated in order to select the most appropriate corrective measure. The only group of constituents investigated in this area is the VOCs. Therefore, it is recommended to select a minimum of 10 boring locations within the boundaries of the Lasso Area and analyze them for the full scan of **Appendix IX constituents, dioxins, and alachlor.** Continuous samples should be collected at 2 ft. intervals until groundwater is reached. Encountering shallow groundwater is not an acceptable excuse for not collecting soil samples. If the appropriate quantity of soil cannot be collected for analyses of all required constituents, then samples should be collected for the following priority of analyses: alachlor, VOCs, Dioxin, BNAs, Metals. In addition, a minimum of 20 soil borings is recommended to attempt to delineate the extent of the contamination. These samples should be analyzed for **VOCs and alachlor.** These samples should be collected at the 2 ft. interval above groundwater where the water table is less than 5 feet below ground surface. If the water table is greater than 5 feet below ground surface, additional 2 ft. samples should be collected at the 2-4 ft. range and where there is any visual purple discoloration of the soil. In addition, if any purple discoloration is encountered anywhere in a particular boring, a water sample should be collected once groundwater is reached.

BUILDING FF AREA

This area was studied due to an apparent PCE tank leak. The only constituent analyzed was PCE. The analytical data indicates that there has been a PCE release to the soil. Since there is no documentation of this contaminated soil having been remediated, it is assumed that the PCE saturated soil was left in place. This area may possibly be the main source of PCE (and TCE) contamination in the groundwater. To help prevent further contamination to the groundwater, it is recommended that this release be contained or remediated. In order to be able to select the most appropriate corrective measure, the extent of the contamination should be defined. Therefore, it is recommended to collect soil samples from a minimum of **10 borings**. Since soil samples have only been collected from the west side of the tank, it is recommended to collect a representation of soil from all sides of the tank. These samples should be collected at the 2 ft. interval above groundwater where the water table is less than 5 feet below ground surface. If the water table is greater than 5 feet below ground surface, an additional 2 ft. sample should be collected at the 2-4 ft. range. These samples should be analyzed for **VOCs**.

BOILER SLAG AREA

Only one soil sample was collected at this area with significant levels of PCBs and Metals detected. Constituents not detected in this sample include VOCs, BNAs, Pesticides, Herbicides, Dioxins, and Furans. PCBs have not been detected in the groundwater, yet, suggesting that the concrete surface may be retarding infiltration of PCBs to the groundwater. Since a release has been verified, it's extent should be defined in order to be able to select the most appropriate corrective measure for containment or remediation of the release. Therefore, it is recommended to collect soil samples from a minimum of **10 borings**. The boring locations should be selected using a grid approach. Continuous sampling is recommended at 2 ft. intervals until the groundwater is reached. These samples should be analyzed for **PCBs and Total Metals**.

ADDITIONAL SOIL INVESTIGATION

At this stage of corrective action at the J.F. Queeny Plant, there is no known documented evidence to indicate that additional areas are a potential source of contamination. If during the course of this investigation additional evidence surfaces to indicate a previously uninvestigated source area, that area will be investigated at that time.

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
VICTOR STREET TERMINAL AREA**

Detected VOLATILE ORGANIC Compounds (µg/kg)

Parameter	VS-1 (10.5-12.5')	VS-2 (1-9')	VS-3 (9-11')	VS-4 (9-11')	VB
Carbon disulfide	♦	8.4J	12J	♦	♦♦
Chlorobenzene	620,000	*	*	*	93,000
Iodomethane	49,000	*	*	*	♦♦
Toluene	♦	14	13	*	♦♦
Ethyl methacrylate	57,000	*	*	*	♦♦

Detected ACID and BASE/NEUTRAL ORGANIC Compounds (µg/kg)

Parameter	VS-1 (10.5-12.5')	VS-2 (1-9')	VS-3 (9-11')	VS-4 (9-11')	VB
Fluoranthene	24,000	15,000	*	*	♦♦
2-Methylnaphthalene	41,000	*	*	*	♦♦
Phenanthrene	♦	13,000	*	*	♦♦
Pyrene	♦	14,000	*	*	♦♦

**Detected PESTICIDES, PCBs, HERBICIDES, CHLORINATED DIOXINS, and
FURANS - NONE**

Detected METALS, TOTAL CYANIDE, and SULFATE (mg/kg)

Parameter	VS-1 (10.5-12.5')	VS-2 (7-9')	VS-3 (9-11')	VS-4 (9-11')
Barium	580	290	490	1,600
Beryllium	1.5	.59	.9	.87
Cadmium	6.4	8.3	4.3	5.0
Chromium	19	8	14	48
Cobalt	9.2	4.7	7.9	9.9
Copper	180J	44J	36J	66J
Nickel	27	17	23	32
Tin	100	7.4	23	*
Vanadium	23	26	29	27
Zinc	1,800J	180J	180J	910J
Arsenic	20J	7.6J	8J	8J
Lead	1,200	230	170	170
Mercury	.95	.39	.37	1.5
Sulfide	2800	*	*	300J

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
VICTOR STREET TERMINAL AREA (CONTINUED)**

Notes on Victor Street Terminal soil data:

♦ High level extraction was employed which increased reported detection limits; therefore this constituent may have been present in this sample and possibly at elevated levels.

* Below detection limit.

♦♦ This sample was not analyzed for this constituent.

J Estimated quantity.

- Soil samples were collected on the following dates:

VS-1 (10.5-12.5')	3-6-91
VS-2 (7-9')	3-7-91
VS-3 (9-11')	3-8-91
VS-4 (9-11')	3-8-91
VB	6-1-88

- The **VS** soil boring data was obtained from the RFI Report. The **VB** soil boring data was obtained from, "Assessment of Hydrogeologic Conditions at the Coal Storage Yard and Victor Street Terminal, Monsanto Company, J.F. Queeny Plant, St. Louis, Missouri", November 1988, Geraghty & Miller, Inc., Table 4.

- Soil Boring VB was composited from VB-1 (4-6'), VB-2 (6-8'), and VB-9 (2-6') and analyzed for VOC's; therefore there is a very good probability that volatilization occurred during sample collection and the reported value of chlorobenzene is much lower than actuality.

- There is no documentation of soil remediation in this area since analytical data has become available; therefore it is assumed that soil contamination is still in place at the Victor Street Terminal.

DRAFTER: EMDB/GS

APPROVED: LM

CHECKED: DC

DRAWING: BULK-ST2

FILE NO.: 1449

PRCT NO.: NY02107

DWG DATE: 2-28-92



PROPERTY
BOUNDARY

FORMER
EARTHEN
BERM

FORMER
STORAGE TANK

VICTOR STREET

EXPLANATION

- VW-1 ● PREVIOUS MONITORING WELL
- VB-1  ~~PREVIOUS SOIL BORING~~
- VW-2B ○ MONITORING WELL INSTALLED DURING THE RFI
- VS-1  SOIL BORING INSTALLED DURING THE RFI

0 100 FT



**GERAGHTY
& MILLER, INC.**
Environmental Services

SOIL BORING AND MONITORING WELL
LOCATIONS IN THE VICINITY OF THE
FORMER BULK CHEMICAL STORAGE TERMINAL

MONSANTO CHEMICAL COMPANY
J.F. QUEENY PLANT ST. LOUIS, MISSOURI

FIGURE

3-2

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
COAL STORAGE YARD**

Notes on the Coal Storage Yard analytical data:

- Three soil borings were measured in the field for VOLATILE ORGANIC COMPOUNDS with a photoionization detection (PID) instrument on 5/26/88. Since these PID values ranged below 13.8 ppm, **soil samples were not collected for laboratory analyses.**

- The only known waste management practice at this SWMU is the storage of stockpiled coal, which would contribute to any semi-volatile contamination, including ACID and BASE/NEUTRAL ORGANIC COMPOUNDS, and POLYAROMATIC HYDROCARBONS.

- The only soil information available for this area was obtained from the document entitled, "Assessment of Hydrogeologic Conditions at the Coal Storage Yard and Victor Street Terminal, Monsanto Company, J.F. Queeny Plant, St. Louis, Missouri", November 1988, pages 12 and 13.

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
QUARRY AREA**

Detected VOLATILE ORGANIC Compounds (µg/kg)

Parameter	QS-1 (0-4.5')	QS-1 (4-9')	QS-2 (0-2.5')	QS-5 (0-2.5')	QS-2 (4-9')	QS-4 CUTTINGS
Chlorobenzene	14	*	*	*	8.6	(800) (1-5')
1,1,1-trichloroethane	*	*	6.2	*	8.9	*

Detected ACID and BASE/NEUTRAL ORGANIC Compounds (µg/kg)

Parameter	QS-1 (0-4.5')	QS-1 (4-9')	QS-2 (0-2.5')	QS-5 (0-2.5')	QS-2 (4-9')	QS-4 CUTTINGS
Acenaphthene	♦	♦	♦	♦	♦	580
Anthracene	♦	♦	♦	♦	♦	990
Benzo(a)anthracene	♦	♦	♦	♦	♦	3,800
Benzo(k)fluoranthene	♦	♦	♦	♦	♦	610
Benzo(b)fluoranthene	♦	♦	♦	♦	♦	990
Benzo(g,h,i)perylene	♦	♦	♦	♦	♦	1,800 (370) (4.5-9.5')
Benzo(a)pyrene	♦	♦	♦	♦	♦	2,700
Dibenzo(a,h)anthracene	♦	♦	♦	♦	♦	480 (350) (4.5-9.5')
Fluoranthene	♦	♦	♦	♦	♦	3,500
Fluorene	♦	♦	♦	♦	♦	1,100
Indeno(1,2,3-cd)pyrene	♦	♦	♦	♦	♦	1,300
Phenanthrene	15,000	♦	♦	♦	♦	2,900
Pyrene	9,400	♦	♦	♦	♦	6,200
p-Phenylenediamine	67,000	79,000	♦	♦	♦	*
Dibenzofuran	♦	♦	♦	♦	♦	470

**Detected PESTICIDES, PCBs, HERBICIDES, CHLORINATED DIOXINS, and
FURANS - NONE**

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
QUARRY AREA (CONTINUED)**

Detected METALS, TOTAL CYANIDE, and SULFATE (mg/kg)

Parameter	QS-1 (0-4.5')	QS-1 (4-9')	QS-2 (0-2.5')	QS-5 (0-2.5')	QS-2 (4-9')	QS-4 CUTTINGS
Barium	460	530	150	130	180	404 (1-5')
Beryllium	.56	.61	*	*	*	(.505) (4.5-9.5')
Cadmium	.76	1.1	4.3J	4.9J	4.5J	*
Chromium	19	31J	22J	20J	22J	(22.4) (1-5')
Cobalt	5.5	8.1	4.7	4.3	6.0	(7.49) (4.5-9.5')
Copper	44	130	57J	38J	5.6J	(55.3) (1-5')
Nickel	15	25	30	28	26	(21.6) (1-5')
Vanadium	25	13	17	15	25	(27.8) (4.5-9.5')
Zinc	250J	460J	96J	110J	130J	(256) (1-5')
Arsenic	12J	16J	8.5	4.5	11	(25.6) (1-5')
Lead	240J	500J	76	31	170	(146) (1-5')
Mercury	.34	.35	.22	.24	.3	(.09) (4.5-9.5')
Sulfide	12	29J	◆◆	◆◆	◆◆	◆◆

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
QUARRY AREA (CONTINUED)**

Notes on Quarry soil data:

♦ High level extraction was employed which increased reported detection limits; therefore this constituent may have been present in this sample and possibly at elevated levels.

* Below detection limit.

♦♦ This sample was not analyzed for this constituent.

♦♦♦ Analytical error. No value available.

J Estimated quantity.

() EPA split quantity

() Depth of split collected

- Soil samples were collected on the following dates:

QS-1 (0-4.5')	2-6-91
QS-1 (4-9')	2-6-91
QS-2 (0-2.5')	2-11-91
QS-5 (0-2.5')	2-11-91
QS-2 (4-9')	2-12-91
QS-4 CUTTINGS	2-25-91

- QS-5 (0-2.5') is actually a duplicate of QS-2 (0-2.5')

- The Quarry soil boring data was obtained from the RFI Report.

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
LASSO AREA**

Detected VOLATILE ORGANIC Compounds (µg/kg)

Parameter	LS-12 (.5-2.5')	LS-14 (.5-2.5')	LS-8 (.6-2.5')	LS-2 (1-3')	LS-6 (1-3')	LS-13A (1-3')
Carbon disulfide	8.2	*	(12)	*	*	*
Chlorobenzene	*	*	37 (40)	*	59,000 (28,000)	*
1,1,1-Trichloroethane	29	57	*	*	*	26
Trichloroethene	*	*	*	*	*	8.9
Xylenes	*	*	*	*	*	12J

Detected VOLATILE ORGANIC Compounds (µg/kg), continued.

Parameter	LS-1 (1.5-3.5')	LS-15 (1.5-3.5')	LS-7 (1.5-3.5')	LSS-1 (3.0-3.75')	LS-11 (2.5-4.5')	LS-12 (2.5-4.5')	LS-14 (2.5-4.5')
Chlorobenzene	1,200	680	14,000 (3,200)	2100 (2500)	390	920	33
Methylene chloride	*	*	*	*	*	*	6.5J
1,1,1-Trichloroethane	*	*	♦	*	*	*	25J
Benzene	♦	♦	♦	(9)	♦	♦	*
Ethyl Benzene	*	*	♦	(31)	*	*	*
Acetone	♦	♦	♦	(67)	♦	♦	♦
Xylenes	♦	♦	♦	(18)	♦	♦	*

Detected VOLATILE ORGANIC Compounds (µg/kg), continued.

Parameter	LS-11 (6.5-8.5')	LS-7 (7.5-9.5')	LS-2 (9-11')	LS-6 (9-11')	LS-15 (9-11')	LS-1 (9.5-11.5')
Chlorobenzene	48	♦	2,300	8,200 (93,000)	23,000	13,000
2-Butanone (MEK)	*	160,000J	*	*	*	*
1,1,1-Trichloroethane	15	♦	♦	♦	♦	♦

Detected Alachlor

<u>Sample</u>	<u>Concentration</u>
LSS-1	1200 µg/kg
EPA Split of LSS-1	180 µg/kg

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
LASSO AREA (CONTINUED)**

Detected Metals at EPA's split of LSS-1 (Note: LSS-1 was not analyzed for metals, only the split was analyzed for metals.)

<u>Parameter</u>	<u>Concentration (mg/kg)</u>
Aluminum	4380.0
Barium	56.1
Beryllium	0.207
Cadmium	0.869
Calcium	127000.0
Cobalt	2.31
Chromium	8.45
Copper	16.5
Iron	10300.0
Lead	18.0
Magnesium	5510.0
Manganese	330.0
Mercury	0.22
Nickel	10.5
Potassium	722.0
Sodium	378.0
Vanadium	11.4
Zinc	46.9

Notes on the Lasso Area soil data:

♦ High level extraction was employed which increased reported detection limits; therefore this constituent may have been present in this sample and possibly at elevated levels.

* Below detection limit.

J Estimated quantity.

() EPA split quantity

- The following samples are replicates:

- o LS-1 (1.5-3.5') + LS-15 (1.5-3.5'); and
- o LS-6 (9-11') + LS-15 (9-11')

- Soil samples were not analyzed at borings LS-3, LS-4, LS-5, LS-9, and LS-10, because the soil was saturated at less than 2 feet below grade.

- Soil samples in the Lasso Area were analyzed only for VOC's due to the nature of known waste management practices in this area.

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
LASSO AREA (CONTINUED)**

- Five soil borings were collected previous to the RFI, but not analyzed. They are B1-B5 and are discussed in the document entitled, "Review of Hydrogeologic Investigations at the J.F. Queeny Plant, Monsanto Chemical Company, St. Louis, Missouri", pages 14-16.

- Soil Borings LS-1 through LS-14 were collected during RFI activities.

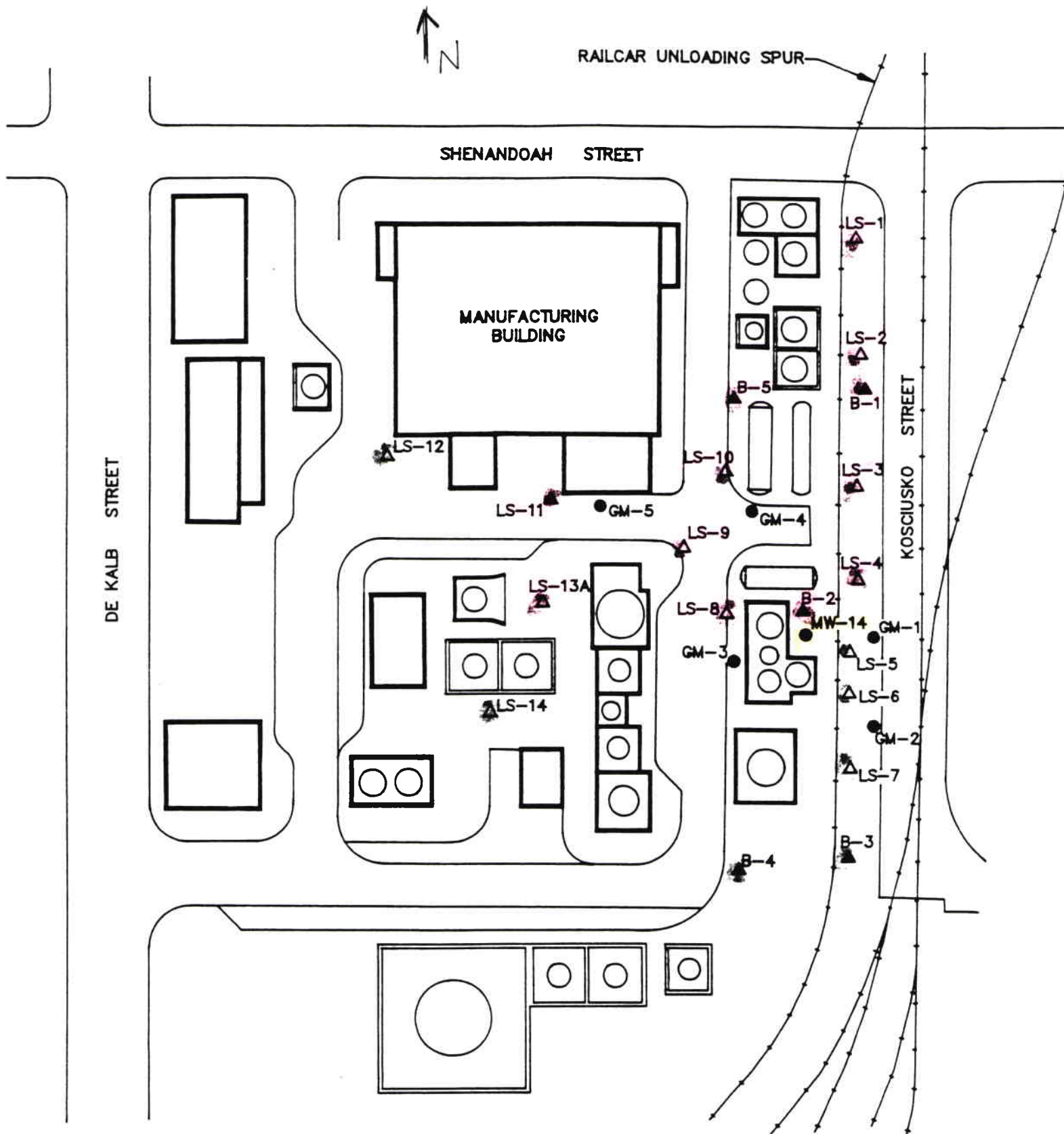
- Boring LSS-1 was collected as an interim measures requirement. This boring was located adjacent to LS-9.

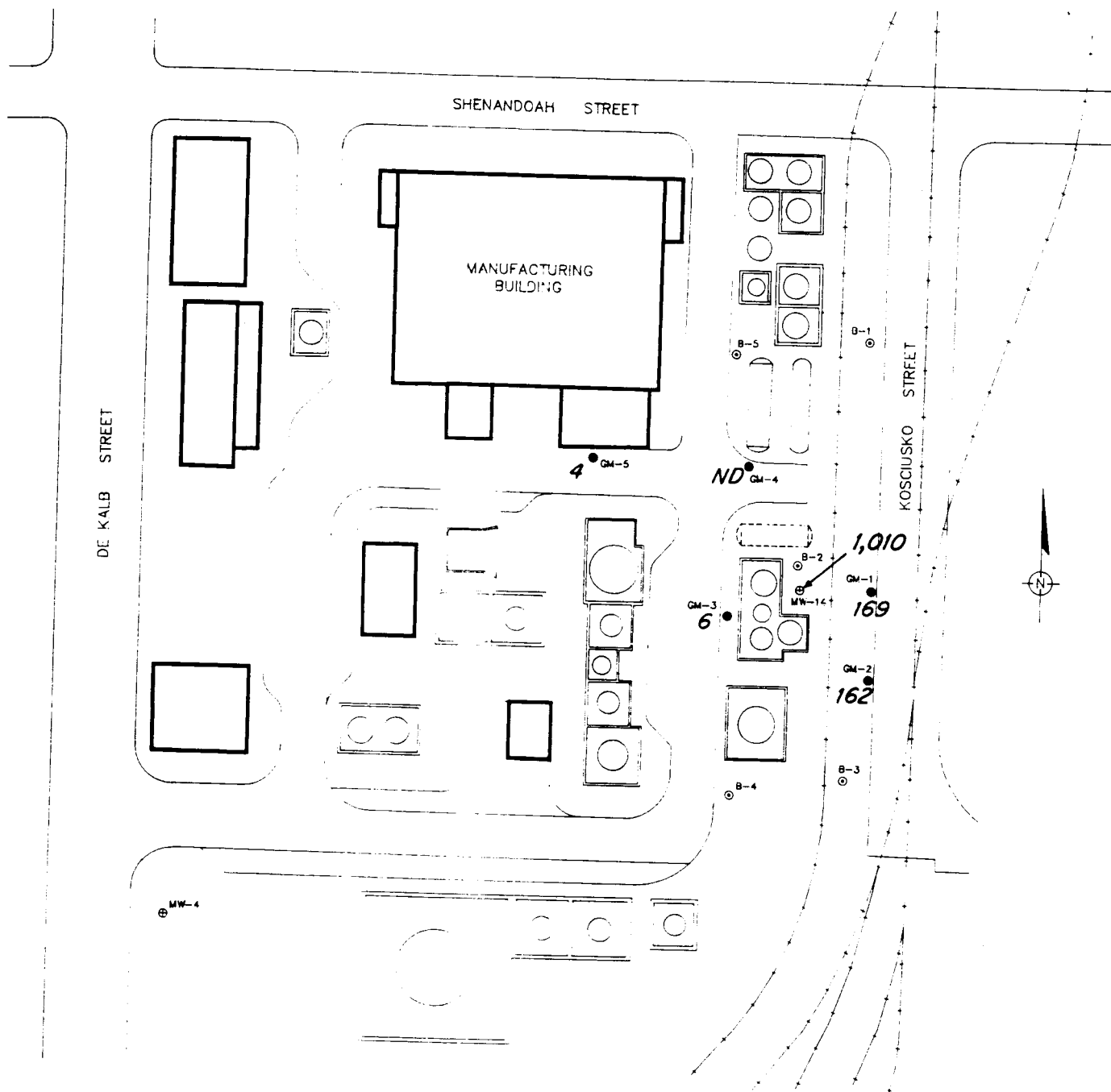
- The soil borings that displayed pink and/or purple discoloration include:

- B1 (0-2')
- B2 (2-4')
- B5 (1-3')
- LS-1 (7.5-7.7' and 9.5-10.5')
- LS-2 (1.5-2.25' and 11-12')
- LS-3 (1-1.5' with purple groundwater/product at 2-2.5')
- LS-4 (purple groundwater/product at 1.75-2.25')
- LS-8 (7"-1' and 2.5-3')
- LS-9 (1-2' with purple groundwater/product at 2-2.5')
- LS-10 (1.5-2')
- LS-11 (.5-2.5', 8.5-9.2', 9.5-10.25')
- LS-13 (3-3.4')
- LSS-1 (3-3.75')

- The dates in which each soil sample was collected are:

B1	11-18-86	LS-6	2-5-91
B2	11-19-86	LS-7	2-4-91
B3	11-19-86	LS-8	2-1-91
B4	11-20-86	LS-9	2-1-91
B5	11-21-86	LS-10	2-5-91
LS-1	2-4-91	LS-11	1-31-91
LS-2	2-1-91	LS-12	1-31-91
LS-3	2-5-91	LS-13	2-1-91
LS-4	2-5-91	LS-14	1-31-91
LS-5	2-5-91	LSS-1	10-8-92





EXPLANATION

- NEW MONITORING WELL LOCATION
- ⊙ NEW SOIL BORING LOCATION
- ⊗ EXISTING MONITORING WELL

162 CONCENTRATION OF ALACHLOR (ppm)

in groundwater

0 50 FEET

SUBJECT:

DISTRIBUTION OF ALACHLOR IN THE VICINITY OF THE LASSO PRODUCTION AREA - DECEMBER 1986

FIGURE

14

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
BUILDING FF AREA**

Detected TETRACHLOROETHYLENE (PCE) ($\mu\text{g}/\text{kg}$)

Parameter	B (10-11.5')	C (10-11.5')	E (5-6.5')	H (10-11.5')
Tetrachloroethylene (PCE)	225.3	104.6	1,933	33.3

Notes on Building FF Area soil data:

- There is no documentation of the PCE saturated soil having been remediated; therefore it is assumed that the **PCE saturated soil was left in place.**
- Soil samples were not collected in this area during the RFI.
- At the time this soil was collected for analysis, the concentration of PCE in soil appears to decrease with depth and decrease with distance from the PCE tank.
- Soil samples were only collected from the west side of the PCE tank. Further assessment of the extent of the PCE contamination is warranted.
- The evaluation and analytical data concerning this area is found in, "Review of Hydrogeologic Investigations at the J.F. Queeny Plant, Monsanto Chemical Company, St. Louis, Missouri", June 1988, Geraghty & Miller, Inc., pp 11-14, Table 9, and Figure 11.



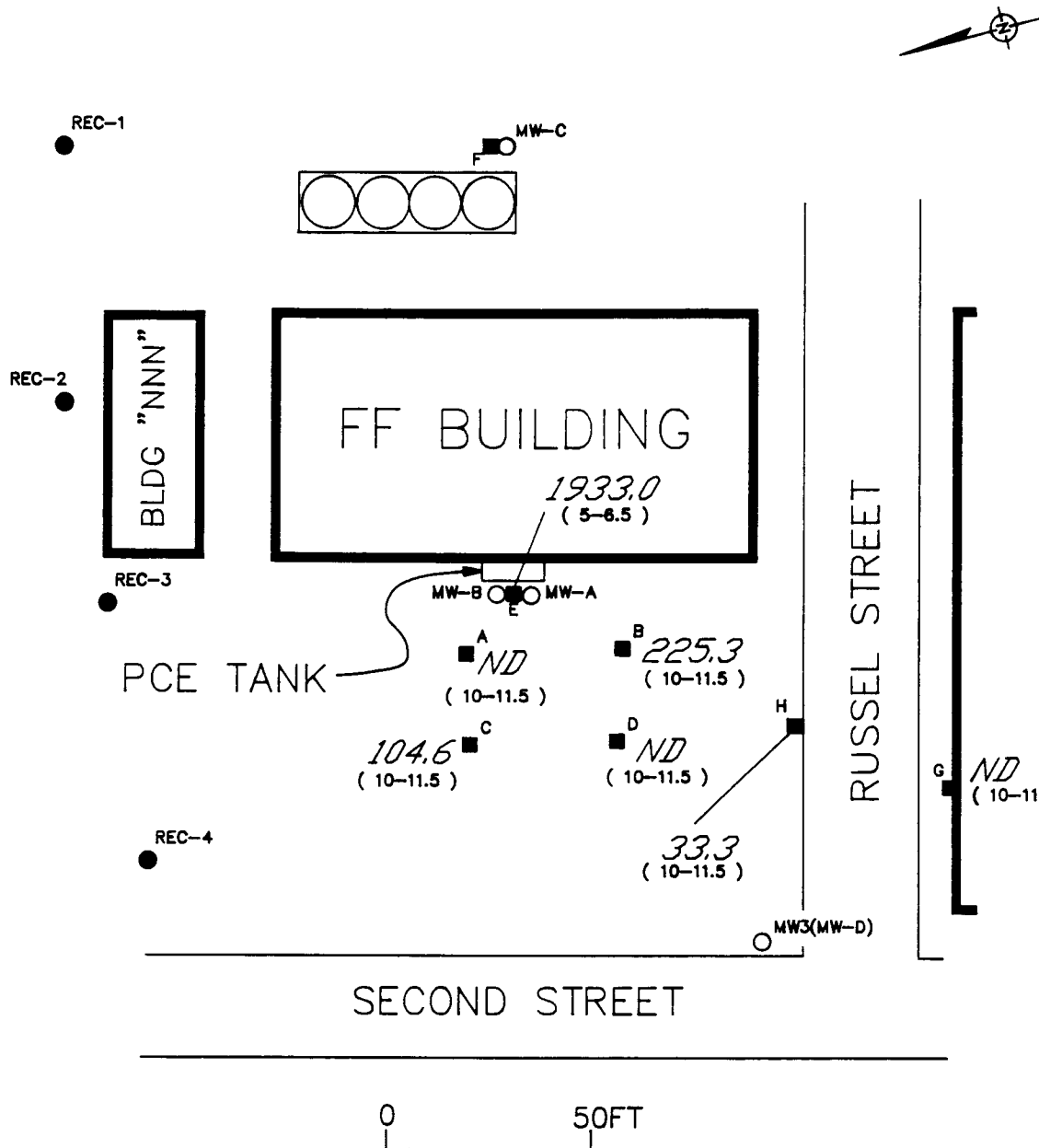
GERAGHTY
& MILLER, INC.
Ground-Water Consultants

COM-
BY: L. Mueller
PREP-
BY: G. Schaffner
PROJECT
MGR.: D. Colton

FILE NO: N308QU3-1060
C.F. NAME: PCE-SOIL

SCALE:
shown
DATE:
3-88

MONSANTO CHEMICAL COMPANY
J.F. Queeny Plant/St. Louis, Mo.



EXPLANATION

- REC-4 BROTCKE ENGINEERING RECOVERY WELL
- MW-A ESE MONITORING WELL
- C ESE SOIL BORING

33.3 CONCENTRATION OF PCE IN SOIL
(MICROGRAMS PER KILOGRAM)

(10-11.5) DEPTH OF SOIL SAMPLE

ND NONE DETECTED

SUBJECT:

CONCENTRATION OF PCE IN SOIL

FIGURE
10

**Detected Constituents at the J.F. Queeny Facility
from the SOIL borings at the
BOILER SLAG AREA**

Detected VOLATILE ORGANIC Compounds - NONE

Detected ACID and BASE/NEUTRAL ORGANIC Compounds - NONE

**Detected PESTICIDES, PCB's, HERBICIDES, CHLORINATED DIOXINS, and
FURANS - from BS-1 (1.25-3.25')**

<u>Parameter</u>	<u>Concentration</u>
Aroclor-1248	89,000 µg/kg
Aroclor-1254	46,000 µg/kg

**Detected METALS, TOTAL CYANIDE, and SULFATE (mg/kg) - from BS-1
(1.25-3.25')**

Barium	180
Beryllium	.70
Cadmium	4.1
Chromium	18
Cobalt	6.3
Copper	35
Nickel	18
Tin	48J
Vanadium	53J
Zinc	250J
Arsenic	6.5J
Lead	260
Mercury	.44

Notes on Boiler Slag Area soil data:

- Soil sample BS-1 (1.25-3.25') was collected on 3/12/91.
- This soil data was obtained from the RFI Report.

Alachlor

Reference: Alachlor Pesticide Registration Standard.
November, 1984 (NTIS No. PB86-179835)

Contact: Registration Branch - OPP
(703) 305-5447

Office of Pesticides
program

Final Regulatory Decision - PD4
51 FR 36166 (10/8/86)

There's suppose to be a PD4 for groundwater
in 1991

{ MCL = 0.002 mg/L
56 FR 3526 (01/30/91) } Drinking water standard which
is = PQL

Monitoring Requirements: 4 consecutive quarters, every 3 years

PQL { Analytical Methods: - Microextraction/gas chromatography (EPA 505)
0.002 mg/L - nitrogen-phosphorus detector/gas chromatography (EPA 507)
- gas chromatographic/mass Spectrometry (EPA 525)

Best Available Technology = granular activated carbon
RFD $1E-2$ mg/kg/day

Randy - should we find out what the daughter products of
this pesticide are?

- What is PD4?

- Do we have documentation stating that an
agreement was made to sample for alachlor in
the Lasso area? The RFI workplan only says
Appx IX VOCs.

EPA/600/4-88/039 Dec. 1988

{ Methods for the Determination of
Organic Comp. in Drinking Water

Alachlor (Cont.)

Study:

Monsanto, 1984

NOAEL = 1 mg/kg-day

LOAEL = 3 mg/kg-day

} on day; gelatin capsule

Critical Effect: Hemosiderosis
hemolytic anemia

2- Butane : (MEK - Methyl Ethyl "ketone")

→ Listed in 1/91 Drinking Water Priority List and may be
Subject to future regulation (56 FR 1470, 1/14/91)

→ Listed in appendix IX for Land Disposal
1981 Listed

52 FR 25942 (07/09/87)

→ Chronic toxicity
Irritability/reactivity

→ No RfD presently

→ Class D carcinogen; no supporting data

→ Contact:

Dharm Singh / OHEA (202) 260-5958

ethyl meth-rylate

IRIS has no info on it

To domethane

can't find This constituent anywhere

42-381 50 SHEETS 3 SQUARE
42-382 100 SHEETS 3 SQUARE
42-389 200 SHEETS 3 SQUARE
NATIONAL



Naphthalene

→ class D carcinogen; no human data

→ Contact: Robert McGaughey / OHEA
(202) 260-5898

OR

Rita Schoeny / OHEA
(513) 569-7544

Water quality criteria for Aquatic Organisms:

Freshwater acute : 2.3×10^3 mg/L

1. Chronic : 6.2×10^2 mg/L

45 FR ~~7~~9318 (11/28/80)

Beryllium

Probable B2 carcinogen

Causes lung cancer through inhalation

Subpart S action level = .2 ppm in air

and .008 ~~ppm~~ ppb in water